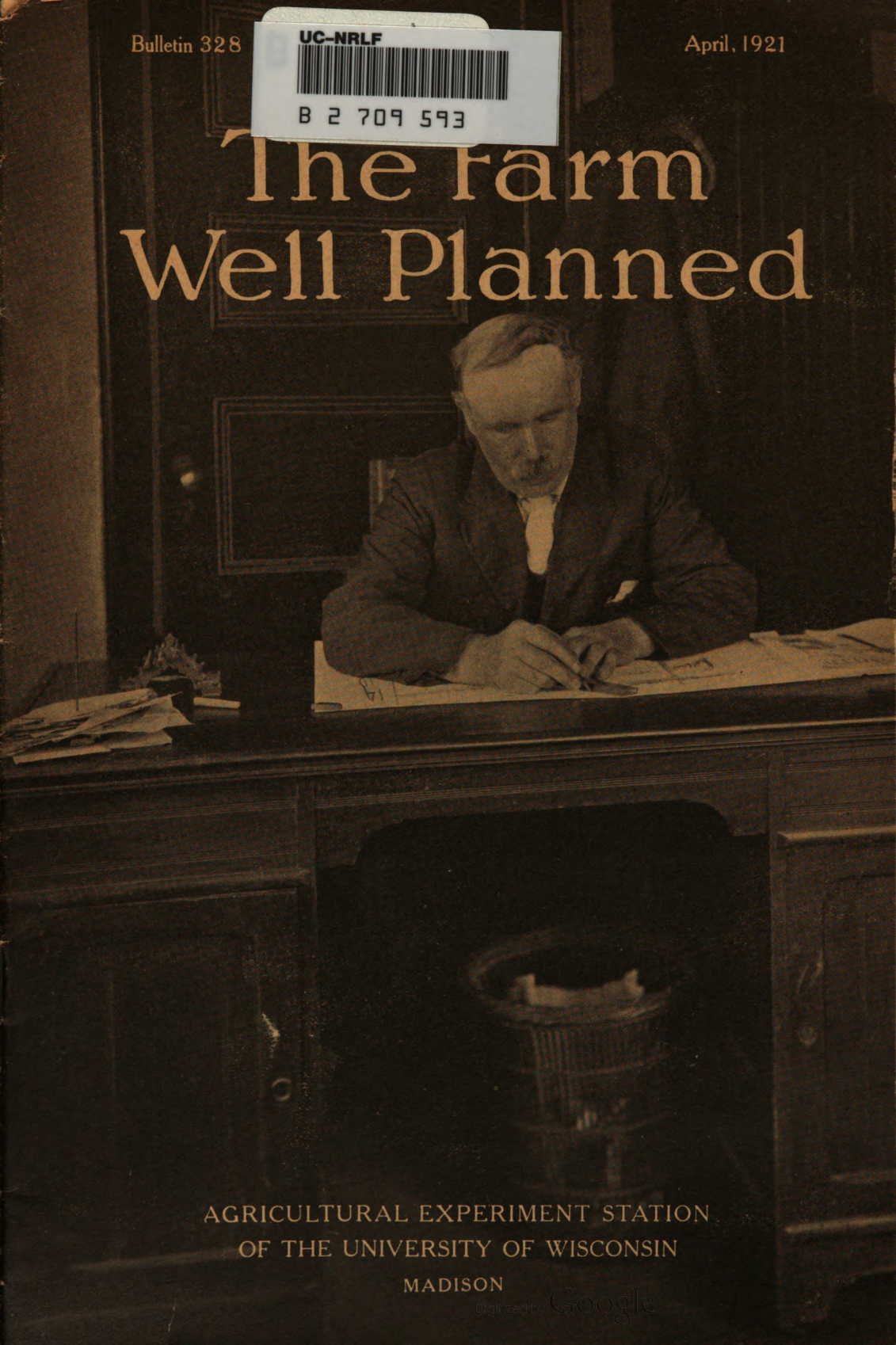
Bulletin 328 April, 1921

The Farm Well Planned



AGRICULTURAL EXPERIMENT STATION
OF THE UNIVERSITY OF WISCONSIN
MADISON

DIGEST

Crops for basic rotation in Wisconsin are corn, small grains and hay. The acreage of each crop is readily adjusted in any rotation system to meet the needs of the farm. Page 5

Large fields are desirable. They reduce the expense of fencing and cultivating and also permit the use of tractors. Pages 7–8

Fields should be regular. It is desirable to have fields one-half longer than they are wide. Plowing, planting, cultivating, and harvesting are more economically handled with long rows. Page 8

The entrance to fields should be near the buildings whenever possible. This saves time in going to and from work. Page 8

Fields should be worked at right angles to the natural slope. This means that it is necessary to study the slope of the fields carefully in making a revised farm plan. Page 8

Steps in farm planning are: Determining the number of cultivated acres; locating the hog pasture near the barn; placing the fields in the pasture rotation so that they will be readily accessible from the barnyard. Page 10

A rotation schedule is needed to show what crop goes into each field yearly. It is helpful to have these crops numbered. Pages 10–11

The rotation schedule can be readily adjusted to meet changing conditions. Substitute crops may be used so as to permit following out the schedule. Page 12

A study of typical farms aids one in replanning his own. Original and revised plans of average farms offer interesting comparisons. Pages 14–28

The Farm Well Planned

D. H. Otis*

The field plans of Wisconsin farms today are the result of a gradual process of fitting the changing needs of a developing agriculture to local conditions. Because they are the product of haphazard growth rather than of definite planning these arrangements are often inefficient.

Replanning them for the purpose of saving labor, maintaining fertility, and increasing production is therefore worth while. The principles of effective field lay-out are not difficult to follow as the actual examples of successfully replanned farms indicate.

How Farm Plans Developed

Wisconsin farms have developed slowly. Fields have been cleared a little at a time. Additions have been made by purchase, or parcels have been sold off. The one-crop system of sixty years ago has been altered by the addition of other crops from time to time increasing the number of fields. Crop rotation has arisen naturally from the need for using different pieces of land for the cultivated crops, small grains, and meadows in order to give the land in cultivated crops a rest. This means to *maintain fertility*, or productive power, as well as to combat more successfully the increasing numbers of noxious weeds and insect pests.

As the type of farming in each region has become more stable, field plans filling the general needs of each type have been worked out. In these systems original field lines have been rather closely followed because crops were rotated on the basis of what each particular crop required rather than on the basis of the farm as a whole. As new acres were broken up for cul-

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* S. W. Mendum, of the Department of Agricultural Economics, assisted in preparing the manuscript for publication.

tivation they were usually handled as field units, each with a different crop each year. Therefore, as the farm developed it had many separate fields, each with the same crop—three or four lots of corn, and others of hay and small grains—until it looked like a patch-work quilt.

Small irregular fields require more labor than do large regular fields; they require more fence when livestock is kept; there is more waste around the edges, to say nothing of the land used for lanes or wagon tracks; and the time spent going to and from fields is often considerable.

CHOICE OF CROPS

Experience has probably led to the adoption of the type of farming best suited to the region in which the farm is located. The farmer knows what crops can be grown successfully on his land, how they are affected by soil and climate and what crops are usually most profitable under ordinary market conditions. He practices rotation in a general way by changing fields occasionally. If he has livestock, he plans his crops to provide for their needs either with or without buying additional concentrates or roughage. Experience has also shown in a general way how much of each crop he can grow with his available labor without changing the size of the farm. Since the general farm scheme is usually well settled, the principles of choice of type of farming need not be discussed, but rather the replanning of the farm to increase the effectiveness of the type adopted.

RELATION OF CROPS TO LIVESTOCK

Adjusting the kinds and quantities of crops to support the livestock is important. Crop production in itself does not need to be discussed here. The types and amounts of crops produced are more or less dependent on circumstances but may be varied, within reasonable limits depending upon weather conditions, almost at will in any season. While the following principles will guide in planning for straight cash crop production, the needs of livestock farmers are most prominent.

From the size of the farm, the crops most successful on it and their average yields, the amount and type of livestock to be kept

is estimated. Enough stock should be kept to consume the feed that can be grown. This is, of course, subject to many variations. If the farm is overstocked, feed must be purchased—usually the concentrates. If it is not stocked to capacity some grain or hay may be sold. The feeding plans determine the rotation to be followed and the farm layout depends on the rotation.

BASIC ROTATIONS

Rotation systems for Wisconsin livestock farms are planned on corn, small grains, and clover or alfalfa, with or without pasture. The "clover" or simplest rotation is corn, oats, and clover in three fields of equal size. Corn is followed by oats or other small grain seeded to clover. This is cut for hay the third year and the clover sod is turned under for corn again the next year, repeating the order. If pasture is needed, the rotation is lengthened one year and four fields are used instead of three, timothy being seeded with the clover and held over a year.

Because of the greater expense of establishing alfalfa and on account of its persistency, rotations including it are usually planned for five or more years with a like number of fields. To distinguish it from others based on clover hay, it is called the "alfalfa" rotation. All the rotations mentioned in this bulletin are modifications of these two. They are given below together with a rotation adapted to the special needs of hogs.

TABLE 1.—BASIC ROTATIONS

"Clover" Rotation		"Alfalfa" Rotation		Hog Pasture Rotation	
Crop No.	Crop	Crop No.	Crop	Crop. No.	Crop
(1)	Clover and timothy (hay)	(1)	Alfalfa	(1)	Clover pasture
(2)	Pasture	(2)	Alfalfa	(2)	Corn
(3)	Corn	(3)	Alfalfa	(3)	Oats, peas, or rape
(4)	Grain seeded to clover and timothy	(4)	Corn	(4)	Grain seeded to clover
		(5)	Grain seeded to alfalfa		

THE CLOVER ROTATION

The clover rotation given is a four-year one providing pasture. In it timothy is seeded with the clover in the small grains. If there is plenty of pasture on the farm without this, the pasture field may be cut for hay (largely timothy) for horses, or the rotation may be reduced to three years. In this case three fields are used instead of four and the timothy is omitted in seeding down. If more corn is needed, it may replace pasture. If both pasture and more corn are needed the number of fields may be increased to five and corn put in two fields. Any other annual crop may be substituted for corn in whole or in part on the "corn" field.

THE ALFALFA ROTATION

The usual life of alfalfa where successful in Wisconsin is three or four years before it winter kills or is choked out by blue grass. The five year rotation shown provides for alfalfa on the same field three years before being plowed under for corn. If alfalfa lasts longer with a good stand it may be desirable to increase the rotation to six or more years. If more corn were needed this would also be true, even with alfalfa retained only three years. If three fields are needed for corn the rotation may be increased to seven years, one-third of the alfalfa being turned under each year for corn. Sometimes bluegrass or noxious weeds cannot be subdued in the one year devoted to a cultivated crop in the five year alfalfa rotation. In that case it may be desirable to increase the rotation to six years using two cultivated crops in succession. Either or both of these rotations, clover and alfalfa, may be used on the same farm at the same time.

THE HOG PASTURE ROTATION

A large variety of crops may be used for hog pasture. Alfalfa is sometimes used instead of clover, and when it grows luxuriantly it may constitute the sole forage crop for hogs. It furnishes good, nutritious pasture from early spring to late fall. It is desirable, however, to have several small fields and to shift from one to another to prevent too rapid killing out of the plants.

Corn is a good crop to "hog down." Temporary fences may be run across the fields and moved from time to time forcing the hogs to clean up as they go, thus reducing waste. The period during which corn can be utilized may be extended by using different varieties of corn or by planting at intervals. Oats, peas, and rape may be planted together or separately. Other grain crops may be used. Succotash is the name of a mixture of small grains grown together. Where many hogs are kept, the rotation may be profitably enlarged to five or six fields requiring a like number of years to complete the rotation. The fields for this should usually be close to the barns. Hog pastures yielding more feed than is needed for the hogs may be pastured with other stock or a portion may be set off with a temporary fence and harvested.

SIZE OF FIELDS

The fields should be as large as possible. Size is sometimes limited by natural or other characteristics of the farm; a highway, railroad, brook, ledge, slough, or wood lot may interfere. Otherwise the rotation or rotations adopted determine the size of fields as indicated above. The principle is to divide the farm into as many equal fields as the rotation runs in years. But, as stated above, the number of years a rotation runs is somewhat governed by the quantity of corn or of hay needed. A simple three year rotation indicates that the total tillable land be worked as three fields, a five-year rotation as five fields. On the same farm, therefore, the individual fields will be smaller with a five-year rotation in effect than with a three or a four-year rotation. A farm with a hundred acres under cultivation would have for a three-year rotation 33 acres each of corn, small grains, and clover. The same farm with a four-year rotation providing additional corn would have four 25-acre fields, of which two, or 50 acres, would be corn. Under the basic five-year alfalfa rotation there would be five fields of 20 acres, 20 acres of corn, 20 of small grains and 60 acres of alfalfa. If more corn were desired and the six-year rotation adopted, there would be 33 acres of corn, 17 of small grains and 50 of alfalfa. Other modifications of acreage used for each crop may be effected by combining an alfalfa and a clover rotation in various proportions.

Large fields materially reduce the expense of fencing. The use of the tractor makes large fields desirable. In cases where the soil of a field is not uniform, and cannot well be given the same treatment throughout, it may be necessary to leave the field divided. Tile drains may be used to render such a field capable of uniform treatment when the chief trouble is too much water.

SHAPE OF FIELDS

Irregular fields are difficult to work. They should, therefore, be laid out as nearly rectangular as possible. In plowing, planting, cultivating and harvesting it is decidedly better to have long rows or strips than short ones. Fields one-half longer than wide are desirable when they can be arranged. The shape of a field may often be much improved by drainage, or by clearing away rocks or stumps along edges or in corners.

LOCATION OF FIELDS

Considerable time and some land will be saved if the fields are laid out so as to be easily reached, with the entrance as near the buildings as possible. This is particularly true where pasture is a part of the rotation plan. Where the public highway divides the farm, two or more rotations may be desirable. The one including pasture should be located on the same side of the road as the barns, where possible. The revised plans following show how these objects are attained as compared with the original time-consuming plans.

Some consideration will usually be given to the location of fields from the viewpoint of their influence on the appearance of the farmstead and the comfort and convenience of the family. The orchard and garden are usually located near the house. Hog lots should be removed from house, dairy, and public highway. The farm woodlot is usually a fixture, sometimes in an inconvenient position, but a well-kept grove near the house is attractive.

SLOPE OF FIELDS

Where the slope of any part of the farm is such that serious soil erosion may occur, the fields should be arranged so that

they may be worked at right angles to the natural wash of the soil. This is important and may necessitate a totally different arrangement from what might otherwise be desirable.

MISCELLANEOUS CONSIDERATIONS

The availability and character of the water supply should be considered in locating buildings, yards and pastures.

Fences should not be used unless necessary as they are expensive, untidy, and useless except for pasture purposes.

Farms frequently have considerable waste or non-productive land. A plan should include consideration of possible uses to which this land may be put. The removal of stumps or rocks, the drainage of swamps, or the putting-in of a tile-head in a pocket or a low spot may make it easy to straighten some of the irregular fields, economize in labor and add to the productiveness of the farm.

It is well to draw a map in replanning to show the size and arrangement of the fields as they are wanted eventually whether the plan will be realized one or five years hence. The plan should be definite and every move made in accordance with it. There are, of course, factors which may delay its realization. Stumps may be in the process of rotting; land may need to be cleared of timber; or stones and old fences may need to be removed and new fences built. Even with cleared, cultivated land the crop of the year before may affect the plan. A good stand of clover or alfalfa should not be plowed under simply because it is located on land where the rotation normally calls for a different crop that year. The rotation must be adjusted to the crop conditions on the farm at the time the new plan is started. This is readily done as the rotation schedules following indicate. (See pages 15–17).

Pasture in rotation is more expensive than permanent pasture but it is more productive. It is also a means of adjusting the labor requirements on the farm. When there is plenty of help, more feed will be available if all the fields are worked. When labor is scarce a fair amount of feed can be provided through use of more meadow land, part of it harvested by the cows themselves.

Where the farm does not make enough stable manure to maintain fertility, the manure may be used on the fields near the

barn, the more distant being maintained by plowing under green manure (legumes) together with rock phosphate, lime or other elements as needed.

STEPS IN PLANNING THE ROTATION

The layout of the farm depends on the rotation to be followed. The aim is to provide one or more rotations that will furnish the needed feed, including pasture, and maintain fertility. This rotation should be adjusted to lend itself to economy in the amount and distribution of labor on the farm. In arranging for the lay-out of the fields the first step is to find the number of cultivated acres on the farm. If a hog pasture is to be provided, acreage sufficient for a hog rotation is set aside and located if possible within easy access to the hog barns and yards. The remaining cultivated acres are then divided for field purposes, according to the rotation or rotations desired. If 125 acres are available for this purpose, and it is desired to have one field, say 25 acres, set aside for alfalfa or other special crops, and the balance put into a four-year rotation with clover and timothy as the hay and pasture crop it will require five fields. In this case the available acreage is divided into five fields of 25 acres each. The fields in any one rotation are arranged to be as nearly the same size as possible, and where feasible made to join each other. Effort is made to locate each rotation where it will best serve the interests of the farm. If pasture is provided in rotation it will usually be with the rotation containing clover which means that this rotation should, where possible, be located within easy access of the barnyards or permanent pasture lot.

THE ROTATION SCHEDULE

In connection with the revised plan of the farm it is convenient to have a schedule for each rotation showing just which crop goes into each field each year. These should be made out separately and kept with the maps. In the schedule each crop is given a number according to its order in the rotation. A good way is to number or letter the fields and below these to arrange the crops to be used on that field. In the suggestions

below, substitute crops are designated by letters. These are crops used out of order in the rotation during the transition period. They are often necessary before the new rotations are established as planned or because of the failure of seedings. The starting point of a rotation schedule is usually a field that was seeded down the preceding year.

MAKING ROTATION SCHEDULES MEET CONDITIONS

Winter killing of clover and alfalfa will interfere seriously with the operation of any rotation schedule; and some farmers assert they cannot adopt a rotation on this account. When a seeding fails to "catch," or winterkills, a little careful planning will enable one to make such substitution as will prepare the field for the next crop in the rotation. In the rotation plans in this bulletin, alfalfa and clover are used frequently. If alfalfa winterkills one year before the schedule time for breaking up, a crop of oats and peas or any other annual crop may be used that year after which the field will fall into the regular rotation. If alfalfa kills out two years ahead of time, grain seeded to clover may be substituted the first year to be followed by clover hay the second, after which the clover sod should be plowed up and the field planted to corn. Where preferred, two annual crops may be grown instead. If alfalfa kills out earlier than this, the field can be seeded back to alfalfa or a crop of grain seeded to clover and timothy can be substituted. This will run two years after seeding.

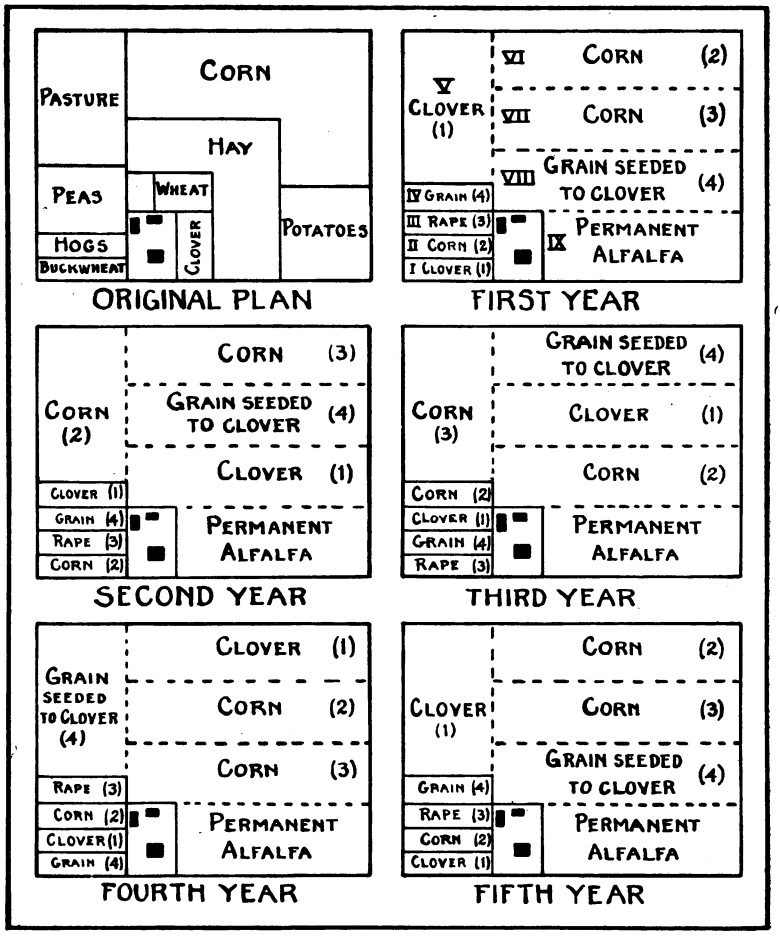
If clover kills out, an annual crop may be substituted. In substituting for alfalfa or clover it is usually desirable to select a crop that will furnish hay as nearly as possible of the quality of that lost to the farm by the winter-killing. Oats and peas serve this purpose well in Wisconsin. Soybeans may also be used with advantage.

When pasture kills out, succotash—a mixture of two or more spring grains—may take its place.

Alfalfa and sometimes red clover may kill out in low or wet places in the field. Where this occurs, alsike clover may be substituted.

When a farm is not fully stocked, or if the land needs special treatment in the way of inoculation or liming, or if the farmer

needs to acquire skill and experience in handling unfamiliar crops, substitutes may be desirable. These should be selected and adjusted to be out of the way when the time comes for the



PLAN SHOWING HOW ROTATION OF CROPS WORKS OVER A PERIOD OF FIVE YEARS

regular crop called for in the rotation plan and for which the soil is in suitable condition.

Noxious weeds like quack grass and Canada thistles may interfere with the seeding down of a field. Then it may be de-

sirable to substitute cultivated crops until such weeds are eradicated. Fortunately, a good stand of alfalfa will kill out many weeds, including Canada thistles.

Alfalfa and clover are usually seeded with some grain as a nurse crop. This utilizes the land and materially checks the weeds. On clean land it is possible to seed alfalfa without a nurse crop and, if the season is favorable, to obtain one crop of hay the same year. It is also possible to seed without a nurse crop in June and July. Some farmers are very successful in growing a crop of peas and then seeding down to alfalfa.

The grain used for the nurse crop varies according to the needs of the farmer. Barley, perhaps, is most frequently used. Oats probably come second and occasionally a seeding is obtained with peas. Good stands of clover and timothy are obtained by seeding timothy with rye in the fall and seeding the clover on the same field in the spring. With all nurse crops, care needs to be taken not to have them too heavy so as to smother the new seeding, or to sap unduly the moisture needed by young clover or alfalfa.

TYPICAL FARMS REPLANNED

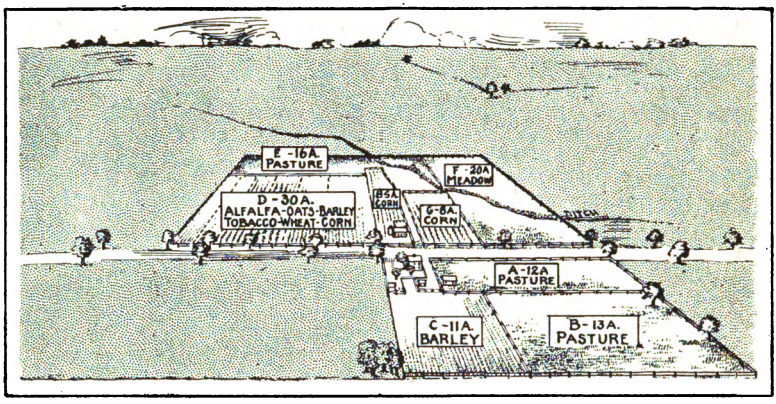
The principles of planning or replanning a farm layout and adjusting this plan to a systematic cropping system may be illustrated by taking an actual farm and showing step by step the process by which these principles are applied.

FARM NO. 1.—Total acres, 120; 2 miles from railroad station; type of soil, clay loam (Burr oak prairie); topography, rolling; 16 acres of permanent pasture and woods, 98 acres available for cultivated crops.

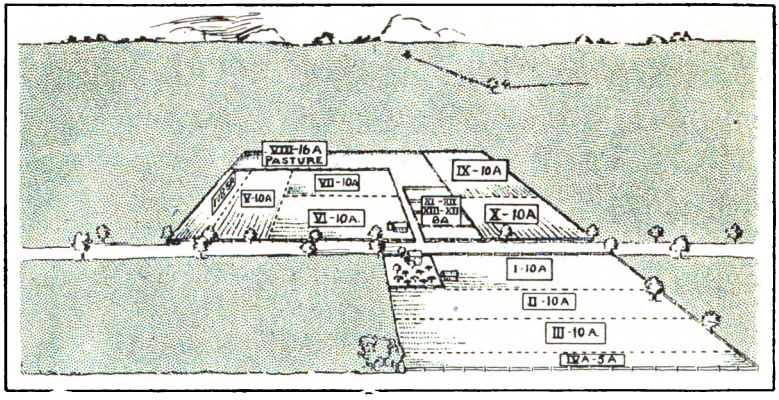
In the original map the fields are designated by letters starting with the letter A at the residence and proceeding around the farm clockwise. In the revised map the fields are marked with Roman numerals.

On this farm the land is well drained. Fields A, B, and C have sufficient slope to necessitate cultivation north and south to prevent soil erosion. There is a ditch through Fields E and F, leaving a shallow run which must be kept in grass to carry off the surface water after heavy rains. The residence, chicken houses, and a shed designed for curing tobacco are on one side of the road and the barns on the other.

The farm has been badly run down from renting. The owner is trying to build it up and to get started in the dairy business, gradually working into purebred dairy cattle. He desires to sell market cream and eventually to go into market milk pro-



FARM NO. 1.—ORIGINAL PLAN



FARM NO. 1.—REVISED PLAN

duction. He wants to raise all the roughage and in addition as much grain as he can. With his cropping system, he desires to use purebred seeds for the purpose of securing the largest production, and when market conditions are right to sell seeds and buy feed. He also desires to raise a considerable number of hogs, and for this purpose intends to keep from 10 to 15 brood sows.

In revising the farm plan, provision is first made for the hog pasture, since these fields should be near the barn. The next consideration is the rotation providing pasture for the dairy herd. The owner desires to have both clover and alfalfa as leading hay crops.

Fortunately, the land best suited to alfalfa is located in the west "forty," as is the residence. This makes it possible to locate the rotation containing clover (including pasture) on one side of the road, so that any field in this rotation is readily accessible.

Before drawing the revised map of the farm it is necessary to select the number and character of the rotations so as to determine the number of fields needed for the cropping systems.

After a conference with the owner of this farm it was decided that for his particular needs it was best to provide a four-year rotation for hog pasture, a four-year rotation with clover and a five-year rotation with alfalfa.

In this revised map it will be seen that eight acres (Fields XI, XII, XIII and XIV) have been set aside for the hog pasture rotation; 40 acres (Fields VI, VII, IX and X) are set aside for the rotation containing clover and pasture for the dairy herd; and 50 acres (Fields I, II, III, IV-A, IV-B and V) for the alfalfa rotation.

Having decided upon the number and character of the rotations needed for the farm, the next step is to make out a "Rotation Schedule" for each, showing what crop is to be planted in each field yearly.

FARM NO. 1—ROTATION SCHEDULE 1—HOG PASTURE*

Year	Field XI (2 acres)	Field XII (2 acres)	Field XIII (2 acres)	Field XIV (2 acres)
1st 192..	(2) Corn	(3) Oats, peas and rape	(4) Grain seeded to clover	(A) Barley
2nd 192..	(3) Oats, peas and rape	(4) Grain seeded to clover	(1) Clover	(2) Corn
3rd 192..	(4) Grain seeded to clover	(1) Clover	(2) Corn	(3) Oats, peas and rape
4th 192..	(1) Clover	(2) Corn	(3) Oats, peas and rape	(4) Grain seeded to clover

* When a seeding fails or winterkills see "Making Rotation Schedules Meet Conditions." Page 11.

In starting a rotation schedule it is usual to start with a field already seeded down to clover. In the hog pasture rotation there was no field seeded the preceding year, so it was deemed wise to start with Field XIII which was in the best condition for seeding. Starting this field with crop No. (4) it was then an easy matter to assign the other fields their appropriate crops and proceed systematically with the schedule.

Barley is used as a substitute crop for Field XIV, which would normally be in clover. Any other annual crop could be used instead of barley without interfering with the plan of the rotation.

FARM NO. 1—ROTATION SCHEDULE II—ROTATION WITH CLOVER*

Year	Field VI (10 acres)	Field VII (10 acres)	Field IX (10 acres)	Field X (10 acres)
1st 192..	(4) Grain seeded to clover and timothy	(A) Oats and peas	(B) Pasture 3 a. Corn 7 a.	(3) Corn
2nd 192..	(1) Clover and timothy meadow	(B) Oats and peas	(3) Corn	(4) Grain seeded to clover and timothy.
3rd 192..	(2) Clover and timothy pasture	(3) Corn	(4) Grain seeded to clover and timothy	(1) Clover and timothy meadow
4th 192..	(3) Corn	(4) Grain seeded to clover and timothy	(1) Clover and timothy meadow	(2) Clover and timothy pasture

* What to substitute when a seeding fails or winterkills see "Making Rotation Schedules Meet Conditions." Page 11.

Field IX (rotation with clover) contained 3 acres of pasture left from a previous seeding. In order to preserve what little seeding there is available, the rotation schedule was started with this field. In deciding on the substitute for Field VII it was thought wise to grow oats and peas, cut for hay, since the farm was decidedly short of hay. After the second year the schedule adjusted itself to the regular rotation.

The schedule for the alfalfa rotation is made on the assumption that it is possible to prepare one field a year for seeding to alfalfa. If this is not possible, it is easy to substitute a rotation with clover in three or four of the fields. Alfalfa can then be tried in one field, or even a portion of a field, until conditions justify a larger acreage.

FARM NO. 1—ROTATION SCHEDULE III—ROTATION WITH ALFALFA*

Year	Field I (10 acres)	Field II (10 acres)	Field III (10 acres)	Field IV-A and IV-B (10 acres)	Field V (10 acres)
1st 192-	(A) Corn 5a. Tobacco 5a.	(B) Corn	(C) Oats and peas	(4) Corn	(5) Grain seeded to alfalfa
2nd 192-	(B) Corn 6½a. Potatoes 2a. Tobacco 1½a.	(C) Oats and peas	(4) Corn	(5) Grain seeded to alfalfa	(1) Alfalfa
3rd 192-	(C) Oats and peas	(4) Corn	(5) Grain seeded to alfalfa	(1) Alfalfa	(2) Alfalfa
4th 192-	(4) Corn	(5) Grain seeded to alfalfa	(1) Alfalfa	(2) Alfalfa	(3) Alfalfa
5th 192-	(5) Grain seeded to alfalfa	(1) Alfalfa	(2) Alfalfa	(3) Alfalfa	(4) Corn

* What to substitute when a seeding fails or winter kills see "Making Rotation Schedules Meet Conditions." Page 11.

This farmer desired to grow tobacco for a few years as a cash crop. Provision is made for this in the substitute crops.

It will be noticed that Field III requires one year, Field II, two years, and Field 1, three years, before they are ready for the regular rotation. Should it be necessary to substitute some clover until alfalfa has shown its adaptability to the farm, a considerably longer time would be needed to make the transition. The farmer, however, has a definite plan before him and adjusts his operations to that plan.

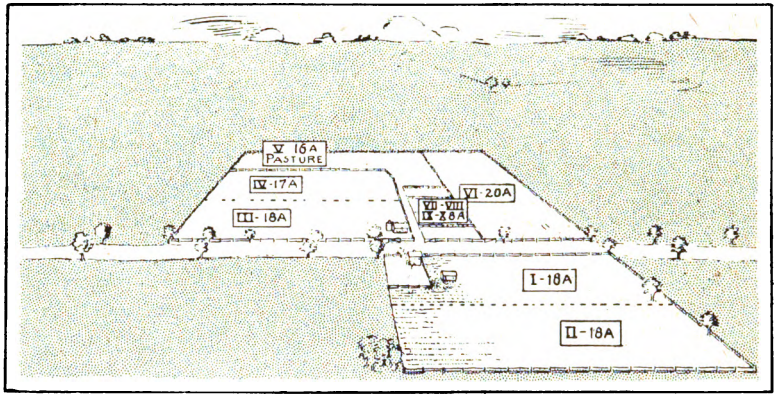
Objections to the plan. The plan given for Farm No. I makes the fields rather small, ten acres each. This would be particularly objectionable if a tractor were being used. Again, Field IV is separated into two parts, A and B, which is objectionable, but unavoidable. In the rotation containing alfalfa, however, there will be no fences, and for many farm operations two or more fields can be grouped together and handled as though they were in one large field.

ANOTHER REVISED PLAN OF FARM NO. 1

The second revised plan of Farm No. 1 provides for larger fields by dividing the cultivated land, other than pasture for hogs, into five fields of about 18 acres each.

One of these fields can be set aside for alfalfa, the remaining four fields can be devoted to a four year rotation with clover

and timothy as a hay crop. The rotation would be essentially the same as provided in Schedule II, except that in this second revised plan pasture in rotation would probably be omitted and



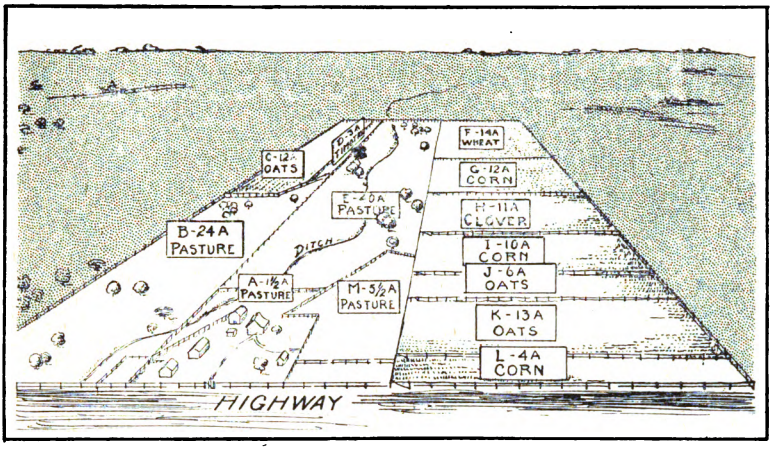
FARM NO. 1.—ANOTHER REVISED PLAN WHICH MAKES PROVISION FOR LARGER FIELDS

a second year hay crop obtained instead. The adoption of this plan will call for the extensive use of the summer silo, or for a liberal allowance of soiling crops. It will permit the keeping of a larger number of cattle, however, and will make possible dividing the farm into larger fields.

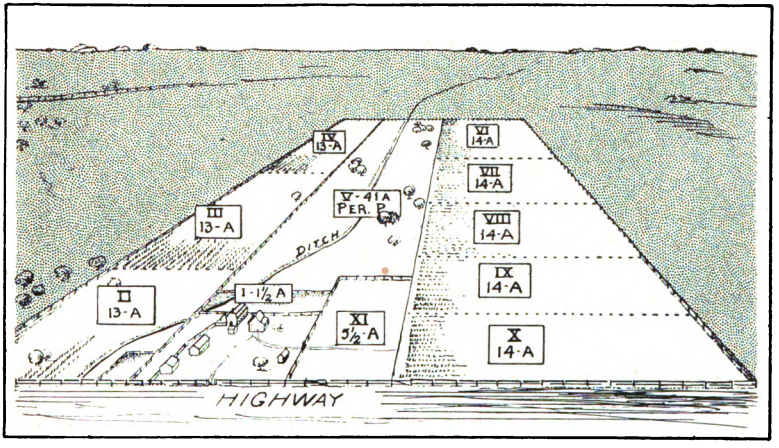
PLANS OF OTHER FARMS

Farm No. 1 has been considered in detail in order to show the method of laying out a farm plan. The original and revised plans of Farms Nos. 2 to 10 are presented to show a variety of conditions under which farm plans can be laid out.

The replanned farms and cropping systems which follow represent actual farms and have been carefully planned in consultation with the owners and approved by them. In most instances the plans are in actual operation, some of them running for several years.



FARM NO. 2.—ORIGINAL PLAN



FARM NO. 2.—REVISED PLAN

Major rotation: (1) Alfalfa* (2) Clover (3) Corn (4) Corn (5) Grain seeded to clover—Fields VI–X inclusive.

Minor rotation: (1) Clover (2) Corn (3) Grain seeded to clover—Fields II, III and IV.

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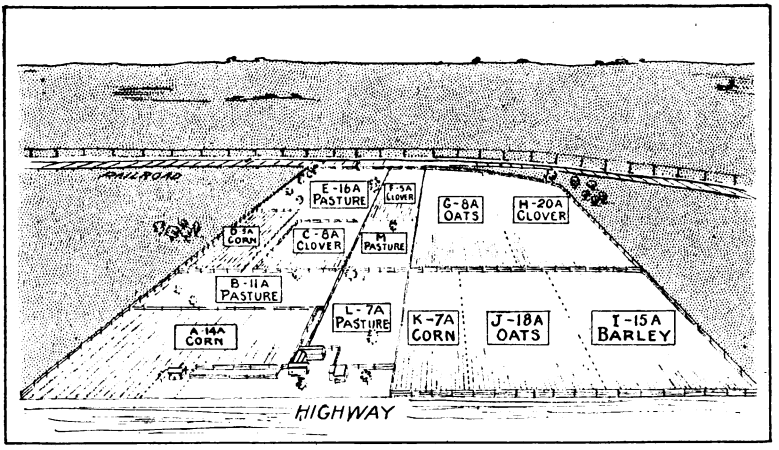
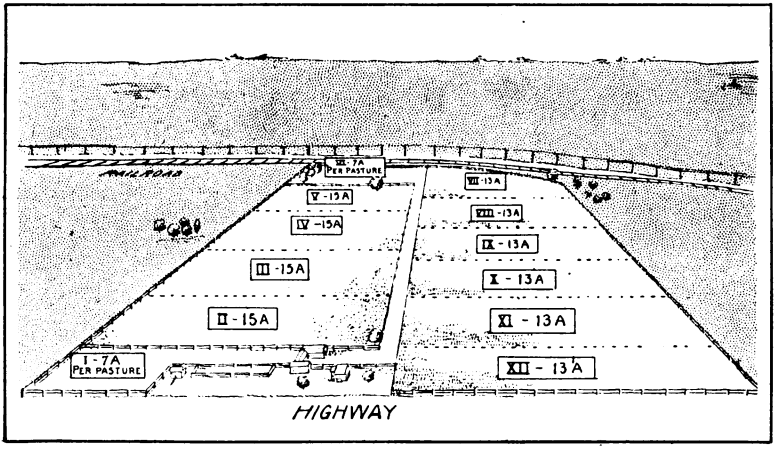
* One field is set aside for alfalfa and remains in this crop as long as there is a good stand. When necessary to reseed, the alfalfa is shifted to another field. The remaining four fields adjust themselves to a regular four year rotation.



FARM NO. 3.—ORIGINAL PLAN



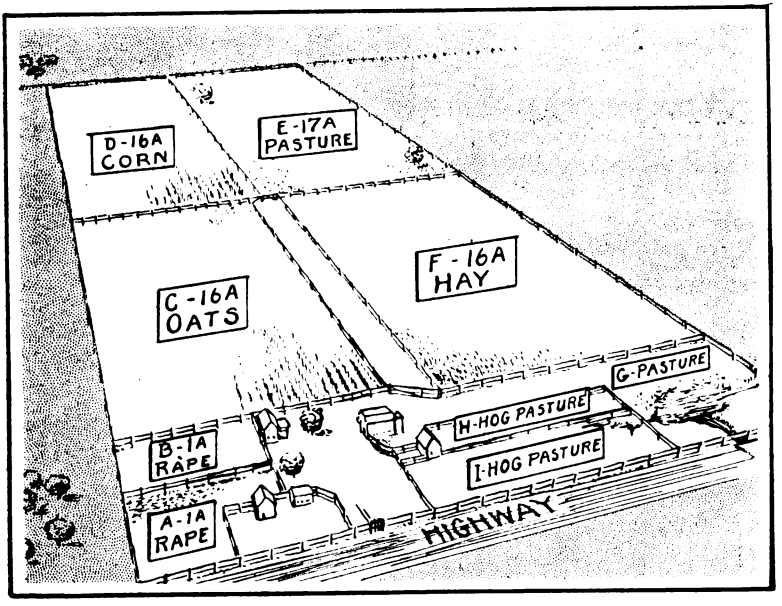
FARM NO. 3.—REVISED PLAN

Major rotation: (1) Alfalfa (2) Alfalfa (3) Alfalfa (4) Corn (5) Corn (6) Grain seeded to alfalfa.

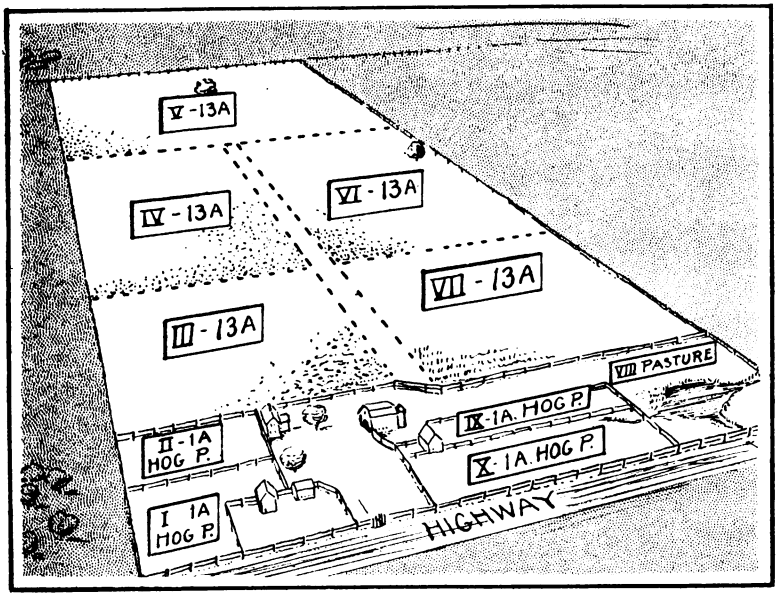
Fields VII to XII inclusive

Minor rotation: (1) Clover and Timothy (2) Pasture (3) Corn (4) Grain seeded to clover and timothy.

Fields II to V inclusive



FARM NO. 4.—ORIGINAL PLAN



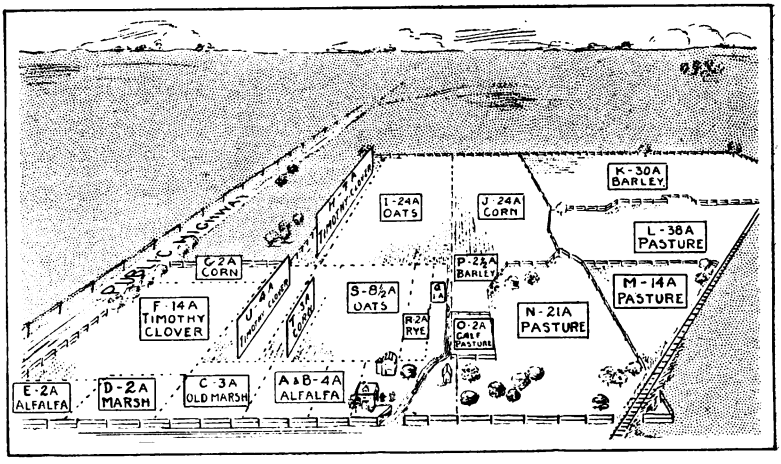
FARM NO. 4.—REVISED PLAN

Major rotation: (1) Clover (2) Pasture (3) Corn (4) Corn (5) Grain seeded to clover and timothy.

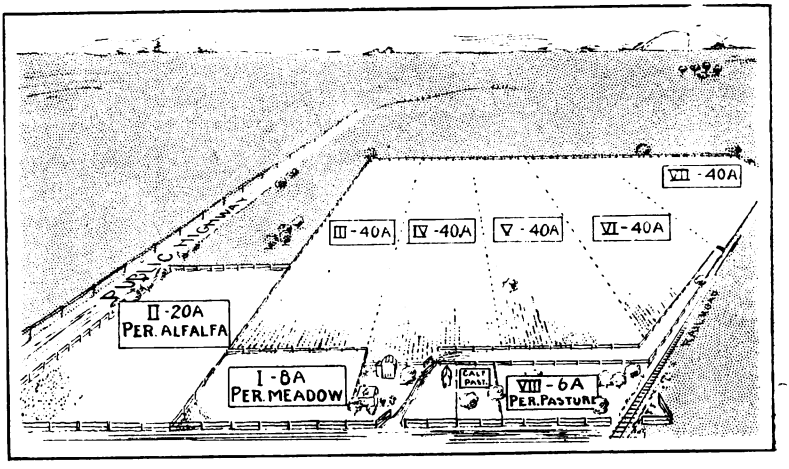
Fields III to VII inclusive

Minor rotation: (Hog Rotation) (1) Clover (2) Corn (3) Rape or succotash (4) Grain seeded to clover.

Fields I, II, IX and X inclusive



FARM NO. 5.—ORIGINAL PLAN



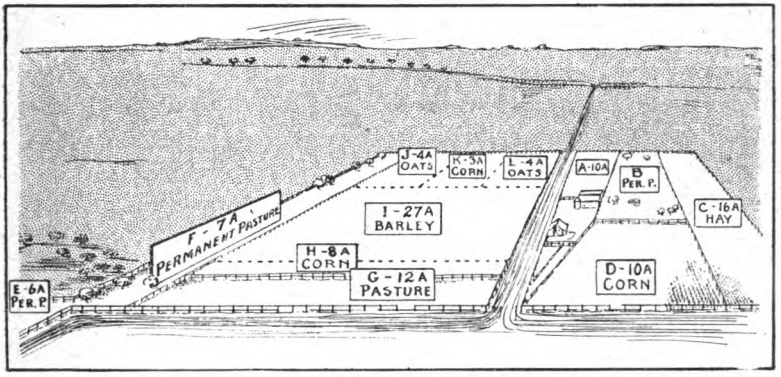
FARM NO. 5.—REVISED PLAN

Major rotation: (1) Alfalfa (2) Alfalfa (3) Alfalfa (4) Corn (5) Grain seeded to alfalfa.

Fields III to VII inclusive

Fields I and II permanently in hay. Field VIII in permanent pasture.

Illustrates the plan of leaving part of the land out of the rotation.



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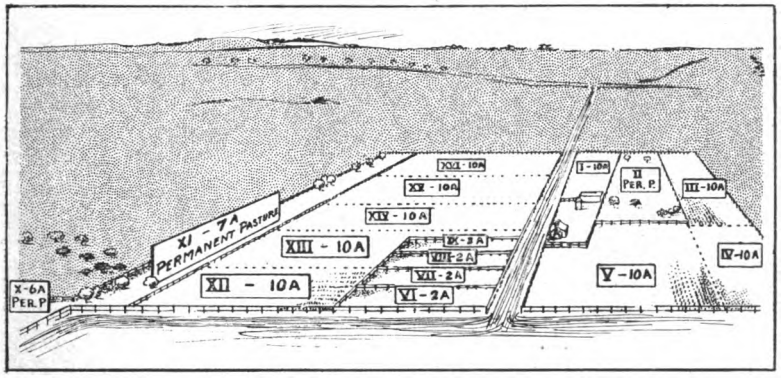


FARM NO. 6.—REVISED PLAN

Major rotation: (1) Alfalfa (2) Alfalfa (3) Alfalfa (4) Corn (5) Grain seeded to Alfalfa.

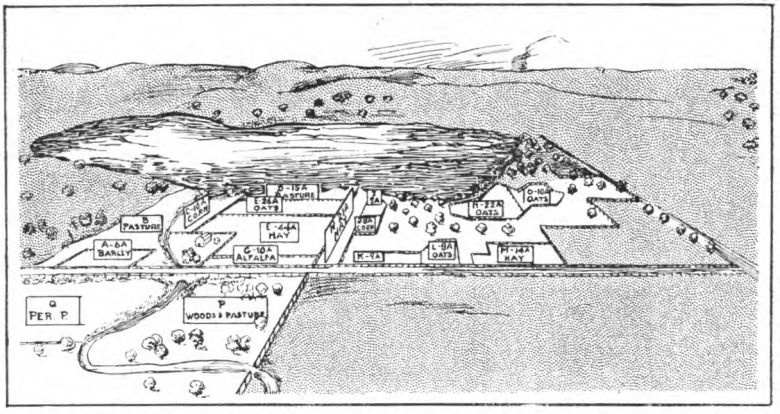
Fields XII to XVI inclusive

Minor rotation: (1) Clover and Timothy (2) Pasture (3) Corn (4) Grain seeded to clover and timothy.

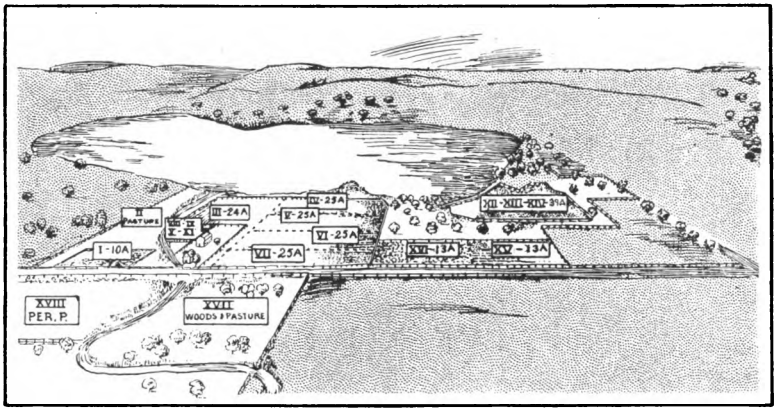
Fields I, III, IV and V

Minor rotation: (Hog Pasture) (1) Clover (2) Corn (3) Rape or succotash (4) Grain seeded to clover.

Fields VI to IX inclusive



FARM NO. 7.—ORIGINAL PLAN



FARM NO. 7.—REVISED PLAN

Major rotation: (1) Clover and timothy (2) Pasture (3) Corn (4) Corn (5) Grain seeded to clover and timothy.

Fields III to VII inclusive

Minor rotation: (1) Clover (2) Corn (3) Corn (4) Grain seeded to clover.

Fields XII to XV inclusive

Minor rotation: (Hog Pasture) (1) Clover (2) Corn (3) Rape or succotash (4) Grain seeded to clover.

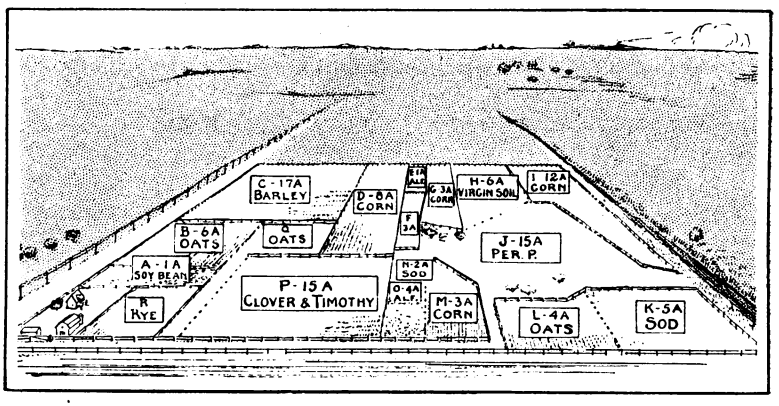
Fields VIII to XI inclusive

Special crops: Field I, permanent alfalfa; to be plowed and reseeded to alfalfa whenever necessary.

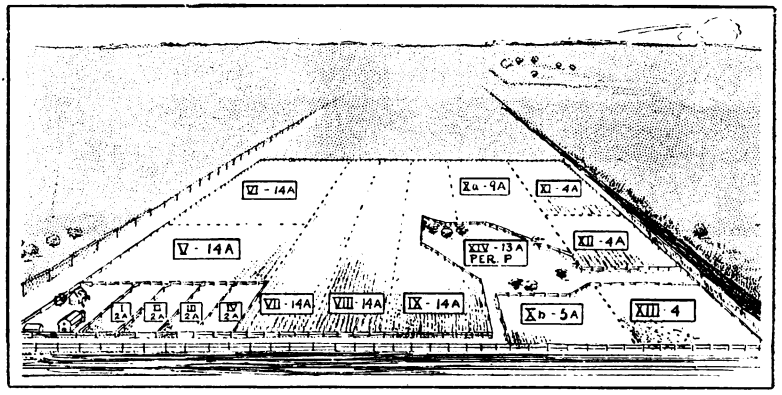
Field XVI, permanent alfalfa; or if desired this field can be substituted for one in the minor rotation (XII to XV) whenever the alfalfa runs out, and one of the latter used for alfalfa.

Plan Your Farm

It is very important for a farmer to have a broad, comprehensive plan or ideal before him in developing his farm, even though it may take years to realize it. Every move in rearranging fields, building fences, constructing buildings, planting fruit trees or shrubbery, can be made to fit in and adjust itself to this plan.



FARM NO. 8.—ORIGINAL PLAN



FARM NO. 8.—REVISED PLAN

Major rotation: (1) Alfalfa (2) Alfalfa (3) Alfalfa (4) Corn (5) Corn (6) Grain seeded to alfalfa.

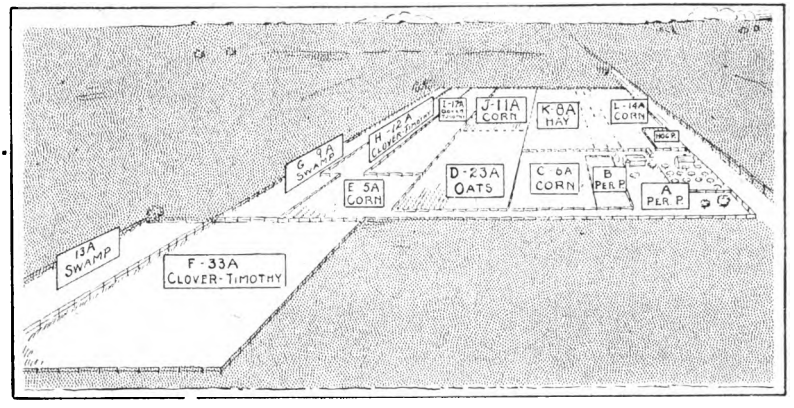
Fields V to X inclusive

Minor rotation: (Purebred seeds) (1) Clover (2) Corn (3) Grain seeded to clover.

Fields XI to XIII inclusive

Minor rotation: (Hog pasture) (1) Clover (2) Corn (3) Rape or succotash (4) Grain seeded to clover.

Fields I to IV inclusive



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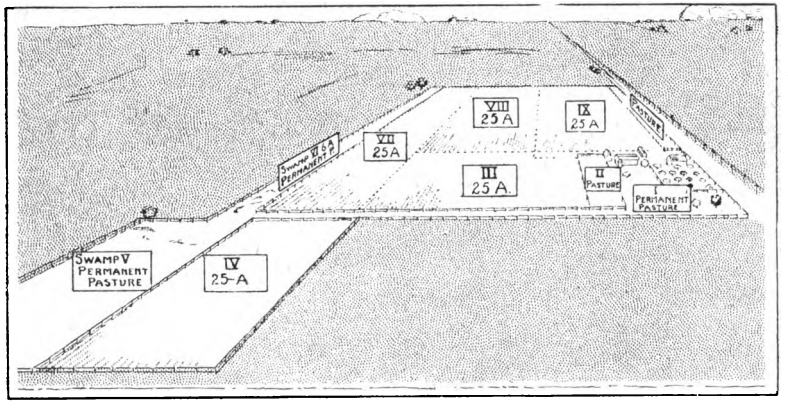
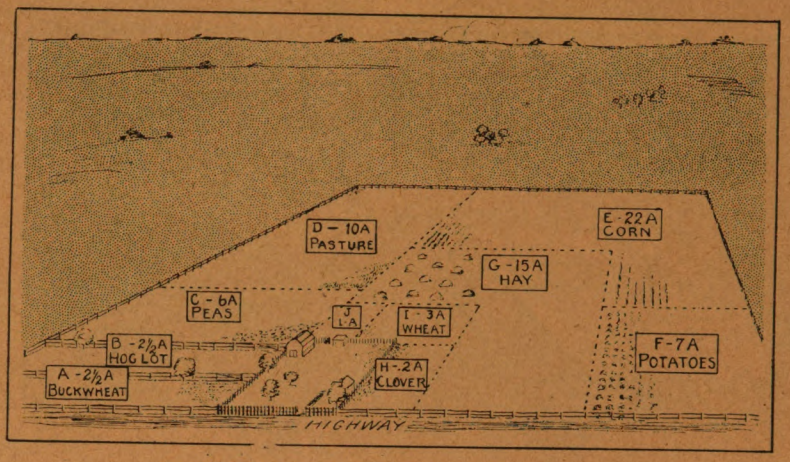


FARM NO. 9.—REVISED PLAN

Major rotation: (1) Clover (2) Corn (3) Corn (4) Grain seeded to clover.

Fields III, IV, VII, VIII

Special crop: Field IX, permanent alfalfa; or if desired this field can be substituted for one in the major rotation whenever the alfalfa runs out and one of the latter used for alfalfa.



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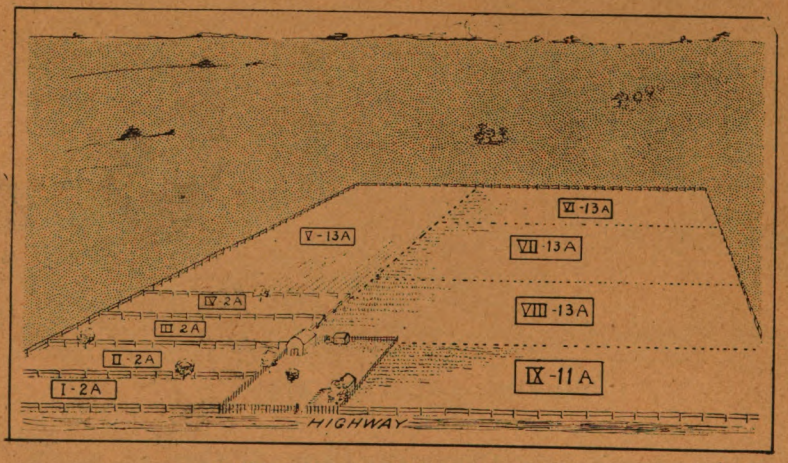

FARM NO. 10.—REVISED PLAN

Major rotation: (1) Clover (2) Corn (3) Corn (4) Grain seeded to clover.

Fields V to VIII inclusive

Minor rotation: (Hog pasture) (1) Clover (2) Corn (3) Rape or succotash (4) Grain seeded to clover.

Fields I to IV inclusive

Special Crop: Field IX, permanent alfalfa; or if desired this field can be substituted for one in the major rotation (V to VIII) whenever the alfalfa runs out and one of the latter used for alfalfa.